

# Pesticides

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## Industry Study with Forecasts for **2016 & 2021**

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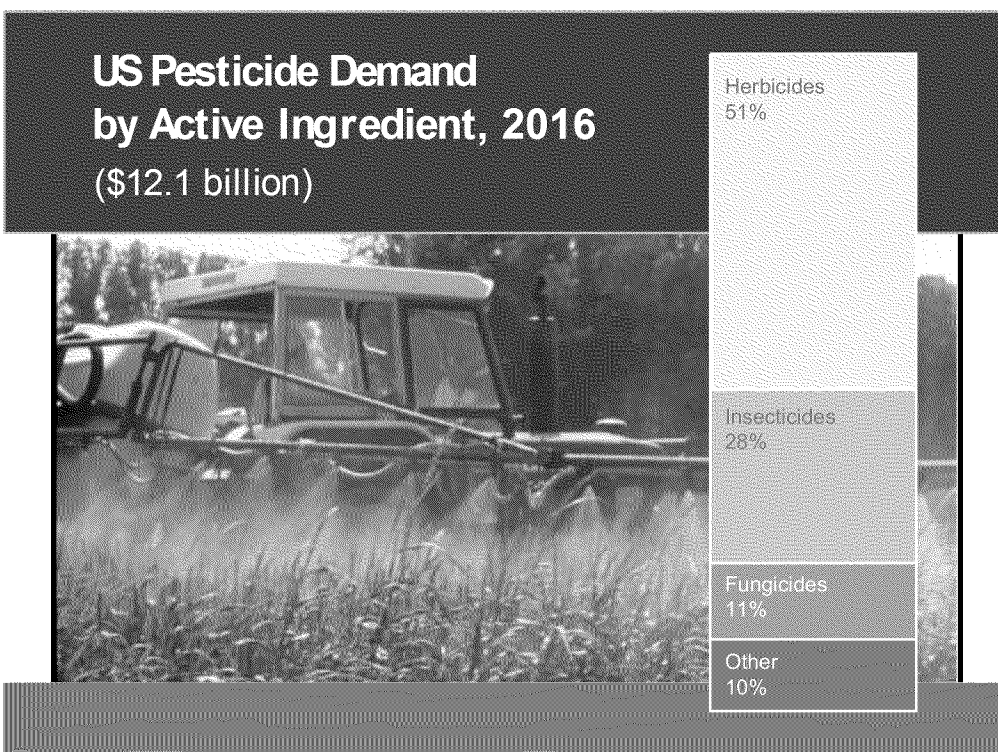
*US growth for formulated pesticide products will advance based on herbicide demand, the largest active ingredient, showing the strongest growth, especially in the agriculture market.*

## US demand to reach \$12.1 billion in 2016

After a period of overall slow growth, US demand for formulated pesticide products is forecast to grow 2.6 percent per year to \$12.1 billion in 2016. Over the same period, demand for active ingredients will increase by 1.4 percent per year to 945 million pounds, valued at \$4.8 billion. The pricing climate is expected to continue to stabilize following a period of erratic pricing for glyphosate, the leading active ingredient. Gains will be driven by rising demand in all three market segments: agriculture, commercial, and consumer.

## Herbicides to remain leading active ingredient

Herbicides will remain the dominant product type, accounting for over half of the market in value terms and 66 percent in volume terms in 2016. Herbicides will also show the strongest growth, although as glyphosate continues to lead the market as the largest active ingredient, farmers will be looking to supplement their glyphosate use with herbicides using different modes of action. Atrazine and 2,4-D, both commonly used herbicides, will expand their market presence as farmers use them for secondary treatment. Demand for dicamba and glufosinate will also rise, particularly when new versions of dicamba- and glufosinate-tolerant crops become available. Herbicides will also post growth in the consumer market, particularly as ready-to-use formulations remain popular.



Insecticides are expected to exhibit slow growth, as volume demand is projected to rise slightly, but gains will be limited by little change in the average price. The best growth prospects will be for products that can replace organophosphates and carbamates, both controversial and potentially harmful classes of chemicals. Usage patterns will move toward insecticides that can be applied in lower doses and have fewer harmful effects on non-target species.

Fungicide active ingredients are forecast to show slow growth, with gains largely due to increases in the number of resistant diseases that are affecting crops, particularly fruit crops. Opportunities for growth will also arise with products that can be used as safer alternatives for

fungicidal fumigants, mainly as products like methyl bromide leave the market.

## Agricultural market to increase most rapidly

The agricultural market is expected to register the most rapid growth for active ingredients. Gains will be fueled by an increase in demand for herbicides in particular, as farmers continue to battle weed resistance. The consumer market will be the next fastest growing segment, particularly as the economy continues to recover and homeowners become more willing to spend money on home and garden products. The commercial market will see slow growth, largely due to slight increases in space for commercial and industrial uses.

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### Sample Text, Table & Chart

#### Formulated Products

##### Types

Demand for all types of formulated pesticides is expected to increase, but formulated herbicides are expected to show the strongest growth. Demand for formulated herbicides is projected to increase by \$1.1 billion in 2016. Increases will be driven by the development of more effective herbicide formulations, including those containing glyphosate. These efforts involve the use of ingredients that had been in decline and the development of pest management systems that include modified seeds and complementary products. Although these older ingredients are off patent, producers can be more selective in their use of higher price for their new proprietary formulated products, especially when a formulated herbicide is meant to be used with an integrated pest management system involving new seed technology. Producers are increasingly turning to these systems for weed management, rather than encouraging farmers to depend on a single product. For example, Dow's forthcoming ENLIST product line will include genetically engineered seeds that are designed to be used with Dow's ENLIST herbicide, which contains glyphosate and 2,4-D.

Demand for formulated insecticides is expected to show growth of 2.3 percent per year to almost \$3.2 billion in 2016, largely due to slight increases in acreage for insecticide-heavy crops like fruits and vegetables, although annual use of insecticide products is also strongly affected by weather. Growth will be limited by the continuation of integrated pest management techniques, as farmers turn to insecticides as a last resort. Insecticide formulations are expected to continue the trend toward lower doses of more potent active ingredients as consumers continue to express concern over the safety of insecticides. These lower dose formulations include the use of seed treatments, particularly with neonicotinoid insecticides.

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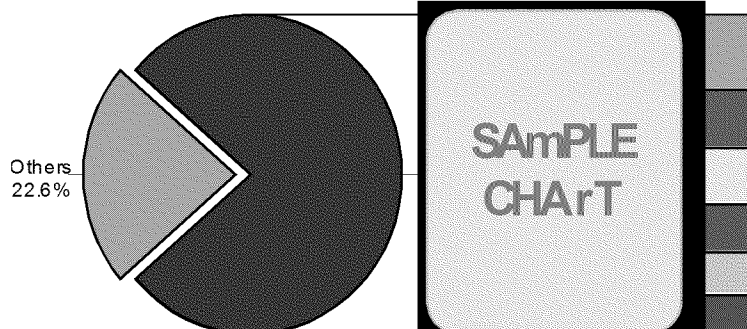
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Item	2001	2006	2011	2016	2021
Cropland Planted (mil acres) lb pesticide/acre					
Agriculture Pesticide Demand					
Corn					
Soybeans					
Vegetables & Melons					
Fruit & Nuts					
Cotton					
Other					

SAMPLE  
TABLE

CHART VI-2

U.S. Formulated Pesticide Market Share, 2011  
(\$10.7 billion)



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## Sample Profile, Table & Forecast

### COMPANY PROFILES

#### McLaughlin Gormley King Company

8810 10th Avenue North  
Golden Valley, MN 55427  
763-544-1111  
<http://www.mgk.com>

Annual  
Employ

Key Pro

McLaughlin Gormley King Company is a family held producer of insecticides, herbicides, fungicides, and synthetic pyrethroids. The Company supplies manufacturing-use intermediates and formulated insect control products, including insecticides, repellents, insect growth regulators and synergists. MGK's products are used in a variety of markets, including agricultural pest control, structural pest control, industrial and institutional, consumer home and garden, vector control and veterinary applications.

The Company is active in the US pesticides industry via the production of pyrethrum-based insecticides for residential, professional and agricultural applications. Residential insecticides made by MGK comprise types that rid indoor and outdoor environments from pests, as well as varieties that protect gardens, flowers, trees, and shrubs from insect damage. Packaged insecticides offered by MGK for residential applications comprise RIPTIDE, SECTOR and VAMPYRE formulations. RIPTIDE water-based pyrethrin insecticides are used to kill mosquitoes and other flying insects and are safe for use in food and nonfood areas. The Company makes SECTOR concentrated water-based insecticides for applications that involve eradicating hard-to-see insects, including

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Item	2001	2006	2011	2016	2021
------	------	------	------	------	------

Pesticide Active Ingredients (mil lbs)					
% herbicides					

Herbicide Demand (mil lbs)					
----------------------------	--	--	--	--	--

Agriculture					
Commercial					
Consumer					

\$/lb					
-------	--	--	--	--	--

Herbicide Active Ingredients (mil \$)					
---------------------------------------	--	--	--	--	--

Agriculture					
Commercial					
Consumer					

% herbicides					
--------------	--	--	--	--	--

Total Pesticide Active Ingredients (mil \$)					
---	--	--	--	--	--

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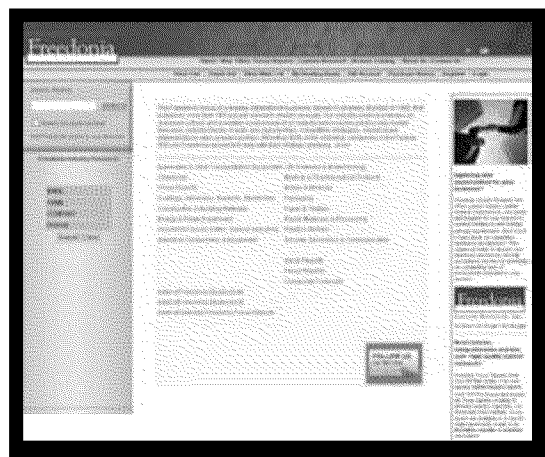
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